

## IFN-gamma Protein, Mouse (HEK293, His)

Cat. No.:	HY-P70668
Synonyms:	Ifng; Interferon gamma; IFN-gamma
Species:	Mouse
Source:	HEK293
Accession:	P01580 (H23-C155)
Gene ID:	15978
Molecular Weight:	15-28 kDa

### PROPERTIES

AA Sequence	<div> H G T V I E S L E S      L N N Y F N S S G I      D V E E K S L F L D      I W R N W Q K D G D  M K I L Q S Q I I S      F Y L R L F E V L K      D N Q A I S N N I S      V I E S H L I T T F  F S N S K A K K D A      F M S I A K F E V N      N P Q V Q R Q A F N      E L I R V V H Q L L  P E S S L R K R K R      S R C </div>
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, 5% Trehalose, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

Background	<p>IFN-gamma is produced by immune cells such as T cells and NK cells, and plays a key role in antibacterial, antiviral, and antitumor responses by activating effector immune cells and enhancing antigen presentation<sup>[1][2][5][6]</sup>. IFN-gamma is involved in the regulation of hematopoietic stem cells under developmental and steady-state conditions by affecting their development, quiescence, and differentiation<sup>[3][4]</sup>. IFN-gamma increases the susceptibility of cancer cells to external and internal apoptosis pathways by regulating the expression of Fas/FasL, TNF-related apoptosis-inducing ligand (TRAIL), caspase-8, -3, -7, and -1, survivin, and Bim<sup>[5]</sup>. IFN-gamma mainly interacts with its receptor IFNGR1 through the JAK-STAT pathway to affect gene regulation. After binding to the receptor, the intracellular domain of IFNGR1 opens, allowing downstream signaling elements JAK2, JAK1, and STAT1 to bind, resulting in STAT1 activation, nuclear translocation, and IFN-gamma-regulated gene transcription<sup>[6]</sup>. IFN-gamma achieves antiviral effects by inducing RNA-activated protein kinase</p>
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R (PKR) and adenosine deaminase RNA-specific-1 (ADAR-1) to activate antiviral proteins<sup>[6]</sup>. IFN-gamma can inhibit the production of IL-4 by TH1 cells and maintain the sustained expression of T-bet<sup>[7]</sup>. As a central effector of cell-mediated immunity, IFN-gamma can enhance antigen recognition through interactions with homologous T cells, amplify antigen presentation through antigen-presenting cells (APCs), increase the production of reactive oxygen species (ROS) and reactive nitrogen intermediates (RNIs), and induce antiviral responses<sup>[8]</sup>.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA